REMARKS

Claims 1, 3-5 and 7-9 remain pending in the present application. Claim 6 has been cancelled. Claims 1 and 8 have been amended. Basis for the amendments can be found throughout the specification, claims and drawings as originally filed.

RCE

Applicant is filing an RCE with this response. The Advisory Action mailed September 1, 2005 indicated that Applicant's amendment filed August 9, 2005 will not be entered. Applicant respectfully requests the Examiner to not enter the August 9, 2005 amendment.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 3, 4 and 6-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Maeda, et al. (U.S. Pat. No. 5,289,968) in view of Nonomura, et al. (U.S. Pat. No. 6,600,137) and Watanabe, et al. (U.S. Pat. No. 5,823,767). Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Maeda, et al. (U.S. Pat. No. 5,289,968) in view of Nonomura, et al. (U.S. Pat. No. 6,600,137) as applied to Claim 1 above, and further in view of Sustarsic, et al. (U.S. Pat. No. 3,984,289).

In a conventional controlled atmosphere furnace with a nitrogen gas atmosphere for brazing, since it is necessary to use a heat source capable of heating in a non-oxygen atmosphere such as an electric heater. This causes the size of the furnace to become larger, much more time is required for brazing, and thus the production efficiency declines. Therefore, the technique by which the entire time for a brazing

process, including a preheating process, can be decreased by means of adding a preheating process, is known.

However, in the known technique, since combustion gas is used in the preheating process, the non-oxygen atmosphere in the preheating process cannot be achieved as in the brazing process. Thus, since the preheating process requires much more time, the flux necessary for brazing deteriorates as time passes and the removal of an oxide layer effective for the brazing process becomes impossible. Further, since the preheated temperature in the preheating process is high, the oxide layer grows and it is impossible to remove the oxide layer in the brazing process.

The present invention has been made in view of the above-mentioned problems. In the preheating process in which an article coated with a brazing flux to be brazed in the non-oxygen atmosphere is heated in the preheating chamber, since the article is heated in about 5 minutes to about 450°C by using the combustion gas, the article is fully preheated without the growth of the oxide layer and thus, the whole time for the brazing process including the preheating process can be decreased.

Maeda, et al. ('968), corresponds to the related art described in the specification, and does not disclose the temperature and time controlled for the preheating process and does not disclose the brazing chamber being directly disposed between atmosphere shutter chambers as defined in amended Claim 1. Further, none of Nonomura, et al. ('137), Watanabe, et al. ('767) and Sustarsic, et al. ('289), disclose the controlled atmosphere furnace for the brazing process in a non-oxygen atmosphere using the flux as is defined in amended Claims 1 and 8. Even if these references are combined, the constitution of the present invention where before the brazing process in

which the article has the brazing flux applied is brazed in the non-oxygen atmosphere, the article is preheated in about 5 minutes to a temperature of about 450°C by using the combustion gas in the preheating process as defined in Claim 1 cannot be obtained.

Thus, Applicant believes Claims 1 and 8, as amended, patentably distinguish over the art of record. Likewise, Claims 3-5, 7 and 9, which ultimately depend from Claim 8, are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: November 3, 2005

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